

The Hon. Treasurer proposed a vote of thanks to the Auditors and their re-election for the ensuing year. The motion was seconded by Mr. C. J. O. Harrison and agreed.

There being no further business, the meeting closed at 7 p.m.

The six hundred and forty-third meeting of the Club was then held.

*Chairman:* Mr. R. S. R. Fitter

Members present: 18; Guests 3.

“Birds as Men and Men as Birds” was the title of a talk, with recorded accompaniment, given by Mr. Jeffery Boswall.

## A hybrid House Sparrow x Tree Sparrow

by ANDRZEJ L. RUPRECHT

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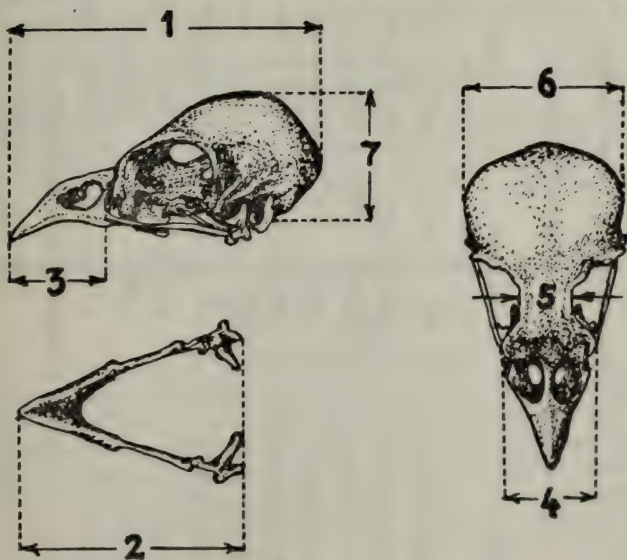
In the wild, hybridisation among different species of sparrows is rare, but hybrids between different subspecies of sparrow are comparatively frequent. Seitz (1964) carried out observations in the south Tirol on the occurrence of natural hybridisation between the House Sparrow *Passer domesticus domesticus* (L.) and the Italian Sparrow *Passer domesticus italiae* (Vieillot) and found varying numbers of hybrids in different localities. Golovanova & Popov (1962) recorded the occurrence of hybridisation between *Passer domesticus griseogularis* Sharpe and *Passer hispaniolensis transcaspicus* Tschusi in natural habitats in the U.S.S.R.; they described a hybrid specimen and also observed a pair in which the male was *P. hispaniolensis* and the female *P. domesticus*. Meise (1934) described an interspecific hybrid from Zwickau, Germany, which showed the characteristics of both House and Tree Sparrows, and similar specimens have been described from Great Britain by Richardson (1957) and Rooke (1957). The observations on captive sparrows, made by Hampe in 1937 and 1938 and published by Meise (1951), prove beyond doubt that hybrids can be produced between different sparrow species.

A sparrow which showed some characteristics of both the House and the Tree Sparrow was shot in Bialowieza (52° 42' N., 23° 50' E.), Poland, on 13th December, 1965. It was a male (sex determined by dissection) which occurred among a flock of House Sparrows. Because of its mixed characteristics, I found this bird difficult to identify and asked three other people to identify it by using the key of Dunajewski & Marchlewski (1938)—all identified it as a Tree Sparrow. The bill was horn black, as in the Tree Sparrow in winter (in the male House Sparrow, the bill is yellowish in winter—Sokolowski, 1958). Of the characteristics of the House Sparrow, the specimen had only a white spot near the eye and an insignificant intermixture of brown-grey feathers on the crown, which was basically rust-brown in colour. Of the characteristics of the Tree Sparrow, it had two white wing bars, blackish ear-coverts and also a brown area under the wings whereas this area is greyish-white in the House Sparrow.

The great similarity of the Bialowieza hybrid to the specimens from Zwickau, Germany, and Dorset, England, must be stressed. Meise (1934) stated that the hybrid differed from the House Sparrow by the reddish-

brown colour of the head with a narrow border of grey-brown on the feathers, and the whitish band on the side of the neck; in addition, the ear-coverts and the brownish tint under the wings were not so clear as in the Tree Sparrow. Such coloration of the crown does not occur in either parent species, but only in the hybrid. Meise (*l.c.*) explains the origin of this intermediate coloration of the crown on the grounds that the genes from neither parent that control crown colour can exert full effect in the hybrid.

Since I have not met any discussion of the skull among the previous descriptions of sparrow hybrids available to me I have given some measurements of it (and of the wing) of the hybrid in the Table together with the range of corresponding measurements from both parent species. For comparison, the skulls of 13 adult male House Sparrows and 10 skulls of adult male Tree Sparrows from Bialowieza were used. On each of these skulls seven measurements were taken, as shown in the figure, to the nearest 0.1 mm. As will be seen from the measurements and indices, the hybrid skull is of size and proportions intermediate between that of *P. domesticus* and *P. montanus*. The length of the mandible, length of maxilla, breadth and height of braincase in the hybrid approach the maximum values of corresponding measurements on *P. montanus*. The skull differs more from that of *P. montanus* in the length of the profile, the lacrymal and interorbital breadths, all of which lie within the range of these measurements in *P. domesticus*. Two of the indices used (1 : 6 and 6 : 5) lie within the ranges for *P. montanus*, but the third (1 : 7) is characteristic of *P. domesticus*.



Method of measuring skull.

- |                       |                          |
|-----------------------|--------------------------|
| 1. Length of profile  | 4. Lacrymal breadth      |
| 2. Length of mandible | 5. Interorbital breadth  |
| 3. Length of maxilla  | 6. Breadth of brain-case |
|                       | 7. Height of brain-case  |

TABLE

Measurements of *P. domesticus* and *P. montanus* as compared with a hybrid.

Species	♂♂ <i>Passer domesticus</i> n = 13	♂ Hybrid	♂♂ <i>Passer montanus</i> n = 10
Measurement	min.—max.	74.6	min.—max.
Wing*	77 — 85	67 — 74	—
1. Length of profile	29.4 — 31.3	29.2	26.9 — 28.0
2. Length of mandible	20.4 — 21.4	19.0	17.6 — 18.5
3. Length of maxilla	10.3 — 11.0	9.8	8.7 — 9.4
4. Lacrymal breadth	8.6 — 9.7	8.8	7.0 — 7.6
5. Interorbital breadth	4.5 — 5.7	4.4	3.3 — 4.2
6. Breadth of braincase	15.3 — 16.6	15.9	14.6 — 15.8
7. Height of braincase	12.3 — 13.1	12.0	11.4 — 12.3
Index 1 : 6	1.85 — 2.00	1.83	1.74 — 1.84
Index 1 : 7	2.35 — 2.46	2.43	2.18 — 2.39
Index 6 : 5	2.71 — 3.51	3.61	3.57 — 4.66
* According to Szczepski & Kozłowski (1953), males only.			
			Average ± SD
1. Length of profile	29.4 — 31.3	29.2	27.33 ± 0.38
2. Length of mandible	20.4 — 21.4	19.0	18.03 ± 0.28
3. Length of maxilla	10.3 — 11.0	9.8	9.14 ± 0.17
4. Lacrymal breadth	8.6 — 9.7	8.8	7.28 ± 0.22
5. Interorbital breadth	4.5 — 5.7	4.4	3.85 ± 0.24
6. Breadth of braincase	15.3 — 16.6	15.9	15.05 ± 0.33
7. Height of braincase	12.3 — 13.1	12.0	11.87 ± 0.24
Index 1 : 6	1.85 — 2.00	1.83	1.81 ± 0.10
Index 1 : 7	2.35 — 2.46	2.43	2.29 ± 0.17
Index 6 : 5	2.71 — 3.51	3.61	3.92 ± 0.37



The Bialowieza specimen had a two-layered skull, in other words, pneumatization was fully completed: this occurs in House Sparrows at about 181–240 days. According to data given by Nero (1951) one could suppose the specimen to be of this age. However, prolonged boiling of the skull with sodium bicarbonate during its preparation revealed that the hybrid may be even older. By measurements, the hybrid skull is fairly similar to young, unossified skulls of House Sparrow, but since pneumatization was complete it could not be treated as a young bird. Moreover, it was shown that skull proportions change with age *i.e.* they are correlated with degree of pneumatization (Ruprecht, in prep.). For example, index 6 : 5 decreases with age in *P. domesticus*, and its value for hybrid specimens is similar to 6 weeks old House Sparrows.

The occurrence of hybrids in the wild is very interesting and surely not a common phenomenon, in spite of the fact that, according to Meise (1951), differences in the behaviour and appearance of different sparrow species do not hinder their hybridisation.

#### References:

- Dunajewski, A. & Marchlewski, J. (1938). *Klucz do oznaczania ptaków Polski*. Kraków, p. 338.
- Golovanova, E. N. and Popov, A. V. (1962). Nabljudenija po estestvennoj gibridizacii ispanskogo i domovogo vorobja. *Mat. po Faun. i Ekol. Naz. Pozv. Tadz.*, Trudy, 22: 39–40.
- Meise, W. (1934). Ueber Artbastarde bei paläarktischen Sperlingen. *Ornith. Monatsber.*, 42: 9–15.
- (1951). Hampes Mischzucht von Haus—und Feldsperling *Passer d. domesticus* (L.) x *P. m. montanus* (L.). *Bonn. Zool. Beitr.*, 2: 85–98.
- Nero, R. W. (1951). Pattern and rate of cranial 'ossification' in the House Sparrow. *Wilson Bull.*, 63: 84–88.
- Richardson, R. A. (1957). Hybrid Tree x House Sparrow in Norfolk. *Brit. Birds*, 50: 80–81.
- Rooke, K. B. (1957). Hybrid Tree x House Sparrow in Dorset. *Brit. Birds*, 50: 79–80.
- Ruprecht, A. L. (in prep.). Morphological variation of the skull of *Passer domesticus domesticus* (L.) in postnatal development.
- Seitz, E. (1964). Zum Mischgebiet zwischen *Passer d. domesticus* und *P. d. italiae* in Südtirol und den südöstlich angrenzenden Gebieten. *Ornith. Mitt.*, 16: 212.
- Sokolowski, J. (1958). *Ptaki ziem polskich*. vol. 1. Warszawa. pp. 441.
- Szczepski, J. B. & Kozłowski, P. (1953). *Pomocnicze tabele ornitologiczne*. Warszawa. p. 513.

## Measurements of some *Streptopelia* doves and their hybrids

by S. J. J. F. DAVIES

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### INTRODUCTION

During studies of the behaviour of *Streptopelia* doves and their hybrids at the Sub-department of Animal Behaviour, Cambridge, the bill length, body weight and egg length of a range of species and their hybrids were measured. The species used were *S. roseogrisea*=*risoria* (Barbary Dove), *S. decaocto* (Collared Dove), *S. turtur* (Turtle Dove), *S. chinensis* (Necklace Dove) and *S. senegalensis* (Senegal Dove). Cole and Hollander (1950) have published data on the body weights of hybrid *Columba livia* x *Streptopelia risoria* which showed the hybrids to be intermediate between the two parents. Irwin and his co-workers (*e.g.* Underkofler and Irwin 1965) have made extensive studies of the inheritance of blood antigens in *Streptopelia* doves, although the differences they studied have been qualitative rather